

SATISFACTION AND PERFORMANCE REVISITED: INTERVENING  
VARIABLES AND INDIRECT RELATIONSHIPS

A Thesis

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## ABSTRACT

The role of employee satisfaction in the human resources literature is one that is long-lived and, while theoretical rationales explaining why satisfaction may influence firm performance abound, little convincing evidence of a strong connection between these constructs exists. The current study suggests one plausible, and in this case, empirically substantiated possibility, namely that the relationship between these constructs can be “purely” indirect. By examining the influence of unit-level employee satisfaction on financial performance in the presence of other theoretically (and organizationally) relevant intervening variables—employee responsiveness, retention, and customer satisfaction—a model was proposed that exhibited remarkably good fit to the data and indicated that the path from satisfaction to performance was indirect as opposed to mediated. Further, proximity effects resulting from causal distance were found.

## BIOGRAPHICAL SKETCH

Jake Holwerda was born in Saskatoon, Saskatchewan, Canada on December 30, 1983 and moved to the United States in 1987 where he has remained since. He received his B.S. (Honors) from the School of Industrial and Labor Relations at Cornell University in 2006.

For Gabriel and Helena Kovacs

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## LIST OF ABBREVIATIONS

CFI: Comparative Fit Index

*df*: Degrees of Freedom

NFI: Normed Fit Index

NS: Not Significant

S.E.: Standard Error

SEM: Structural Equation Modeling

RMSEA: Root Mean Square Error of Approximation

## LIST OF SYMBOLS

### Arabic

$b$ : Unstandardized path/regression coefficient.

$B$ : Number of bootstrap resamples.

$cov$ : Covariance.

$p$ : P-value.

$r$ : Pearson correlation coefficient.

$S^*$ : Bootstrap resample covariance matrix.

$N/n$ : Sample size.

$Z$ : Set of covariates/controls.

### Greek

$\beta$  (beta): Standardized path/regression coefficient.

$\theta$  (theta): Population characteristic.

$\hat{\theta}$  (theta hat): Sample population characteristic.

$\hat{\theta}^*$  (theta hat star): Bootstrap resample population characteristic.

$\rho$  (rho): Correlation/true score correlation.

$\sigma$  (sigma): Standard deviation.

$\chi^2$ : Chi-square.

## CHAPTER 1

### INTRODUCTION

The fields of human resource studies and organizational psychology have long attempted to establish a causal relationship between employee satisfaction— a “pleasurable or positive emotional state resulting from the appraisal of one’s job experiences” (Locke, 1976: 1304)—and various types of performance. Despite this, a definite and consistent link between satisfaction and performance has proven difficult to confirm, as evidenced by several meta-analyses conducted over the years. More specifically, qualitative reviews as well as quantitative analyses have shown, respectively, weak relationships and weak to moderate correlations between employee satisfaction and workplace performance (e.g., see Brayfield & Crockett, 1955; Vroom, 1964; Petty, McGee, & Cavender, 1984; Iaffaldano & Muchinsky, 1985; Judge, Thoreson, Bono, & Patton, 2001). Thus, despite a focus on the subject lasting well over fifty years, the evidence that satisfied workers perform better at their jobs or produce better results than their dissatisfied counterparts remains only moderately convincing at best. Notably, issues of design and measurement may be more responsible for the lack of consistent findings than many researchers have recognized. For instance, many studies have implicitly assumed a direct relationship between employee satisfaction and firm performance. At least some researchers, however, have recognized the possibility that this relationship is mediated by other variables (e.g., see Judge, et al, 2001). Nevertheless, this prospect has remained largely unexplored while the few treatments of the subject that have considered mediating roles focus on affective and cognitive processes (e.g., see Brown & Peterson, 1993).

In contrast, when employee satisfaction is conceptualized as a global/overall measure and performance is considered at the unit- or firm-level, other more tangible

mediators may play a role. For instance, the “service-profit chain” (Heskett, Jones, Loveman, Sasser, & Schlesinger, 1994) delineates a path by which employee satisfaction, supported by internal service quality—i.e., HR practices and systems—creates bottom-line value for firms through the generation of superior business performance. Under this model, employee satisfaction is viewed as critical to inspiring the productivity and service necessary to secure business success and drive growth and profitability. Satisfaction is proposed to have a positive effect on retention and productivity, each of which contribute to an increased service value to customers. When service value increases, so does customer satisfaction. Satisfied customers become loyal to the firm and, finally, the repeat business generated by these customers drives overall profitability and growth.

Further, a global conception of employee satisfaction and firm performance suggests three aspects about the relationship between the constructs that, heretofore, have received relatively little attention in the extant literature. First, the relationship between employee satisfaction and firm performance is subject to effects of proximity. Dyer (1984) recognizes three levels of outcomes within firms—personnel or human resource outcomes, organizational outcomes, and financial or bottom-line outcomes. Each is distinguished by its degree of proximity to organizational/human resources interventions and, accordingly, the degree to which contamination (or deficiency) of measures is a possibility. Specifically, “human resource strategies are likely to have their most direct effects on human resource outcomes, next greatest on organizational outcomes, and so forth” (Dyer & Reeves, 1995: 661) with an increasing likelihood of contamination found as one progresses toward higher-level (i.e., bottom-line) measures. While this treatment focuses on the impacts of human resource practices/strategies on firm performance and not satisfaction per se, the logic is helpful in conceptualizing the potential for different magnitudes of the satisfaction-

performance relationship—i.e., the greater the proximity a performance measure has to a satisfaction antecedent in a causal framework, the stronger the relationship between satisfaction and that outcome measure ought to be.

Additionally, more proximal measures, while possibly suffering from deficiency in capturing the construct of performance, should be less subject to contamination, suggesting that such measures will exhibit a stronger relationship to satisfaction. Conversely, more global measures of performance such as sales or profits should be less affected by problems of deficiency, but are far more likely to be contaminated by factors beyond those causally arising from satisfaction. Thus, such bottom-line measures would be expected to exhibit relatively weaker relationships to satisfaction. Therefore, much of the variance in magnitudes of observed relationships in previous work may, in fact, be due to the operationalizations of performance employed within a study. Given that only a small minority of studies examining the satisfaction-performance relationship have employed performance data from multiple sources—in the most recent meta-analysis of the subject only eight percent of the 312 studies considered made use of performance measures from multiple sources (Judge, et al., 2001)—it is possible that inconsistencies in results are due to variance external to the true satisfaction–performance relationship. That is, the correlations observed in many studies may be influenced by the nature of the measures used.

Second, models specifying a mediated or direct relationship between satisfaction and performance may be inappropriate at the firm level. Specifically, firm-level performance is separated from employee satisfaction by a rather lengthy causal chain of intermediate variables at this higher level of analysis. This may create the possibility that while the influence of satisfaction on more proximal variables is significant and the relationship between those proximal variables with firm performance is significant, no significant relationship exists between employee

satisfaction and performance despite its indirect influence. More generally, a direct path between predictor and criterion variables may not be significant “despite the fact that the predictor → mediator and mediator → criterion paths [are] significant.” (Holmbeck, 1997: 603):

“Although there is evidence for an indirect effect between predictor and criterion...the mediator does not (and cannot) significantly ‘account’ for the predictor → criterion relationship...because there was not a significant relationship between the predictor and criterion in the first place.”

Given the potential causal distance between employee satisfaction (which itself arises from cognitive and affective processes within individuals) and firm-level performance, it appears at least plausible that investigating the possibility of an indirect relationship may be more appropriate especially given the aforementioned effects of proximity.

Third, the individual-level focus of satisfaction-performance studies may have understated the true strength of the relationship between these constructs. Specifically, organizational performance may not accurately be captured by narrowly defined measures of individual performance since these measures do not assess the full domain of actions individual employees may take when they are satisfied. Beyond this, the variability of individual-level performance measures may itself be limited, resulting in restriction of range (Organ, 1977). Individual-level performance measures in organizations are designed to constrain variability in performance to a predetermined level, thus reducing the magnitudes of observed correlations between individual-level performance and satisfaction. Further, since firm-level performance is largely dependent on the interactions of individual behaviors, it cannot be thought of as the mere sum of them (Ostroff, 1992). As a result, stronger relationships may be observed at the organizational level since “the effects of interdependence are captured

in the organizational-level variables” (Ostroff, 1993: 570). The limited empirical work available on unit- and organizational-level constructs of satisfaction and performance supports the contention that individual behaviors may exhibit a multiplicative, rather than additive, effect on organizational performance (Ostroff, 1992; Harter, Schmidt, Hayes, 2002). Thus, it appears that the level of analysis at which performance measures are operationalized may have a significant effect on the final determination of the relationship those measures have with satisfaction.

Given the potential for the satisfaction-performance relationship to operate somewhat differently at higher levels of analysis, the current study aims to meet three goals: (a) examine whether predictions about proximity and its effects on the magnitudes of relationships between employee satisfaction and distal performance outcomes hold; (b) assess the relative appropriateness of mediated versus “purely indirect” models in evaluating the causal mechanisms through which satisfaction may influence firm performance; and (c) examine the magnitude and nature of theoretically predicted linkages between satisfaction and various measures of organizational performance at the unit-level.



## CHAPTER 2

### LINKAGES IN THE SATISFACTION-PERFORMANCE RELATIONSHIP

Theoretically predicted links between employee satisfaction and various organizationally relevant variables are now proposed. Further, specific links are combined to form a comprehensive model describing the potential influence of employee satisfaction on both proximal and distal outcomes. *Figure 1* illustrates both specific hypotheses as well as the full model as specified by theory.

#### **Employee Satisfaction and Employee Retention**

Despite a general lack of consideration of retention as a construct, the relationship between employee satisfaction and turnover is one that has received much attention. Given that these two terms appear to be used almost interchangeably in the literature and, at least, are considered complements of one another, theory regarding turnover is discussed here. Most models of turnover suggest a negative relationship between employee satisfaction and turnover (Rust, Stewart, Miller, & Pielack, 1996) although, unfortunately these models are relegated to the individual level. For instance, the relationship between satisfaction and turnover can be explained through the theory of reasoned action (Fishbein & Ajzen, 1975). Specifically, the theory posits that attitudes influence intentions, which themselves result in behaviors. Thus, a satisfied employee is conjectured to possess a lower intention to leave the organization and this intention translates into lower turnover. Mobley (1977) also posits a model of employee turnover that begins with job dissatisfaction, progresses through a number of cognitive and affective steps, and eventually culminates in a decision to voluntarily terminate employment.

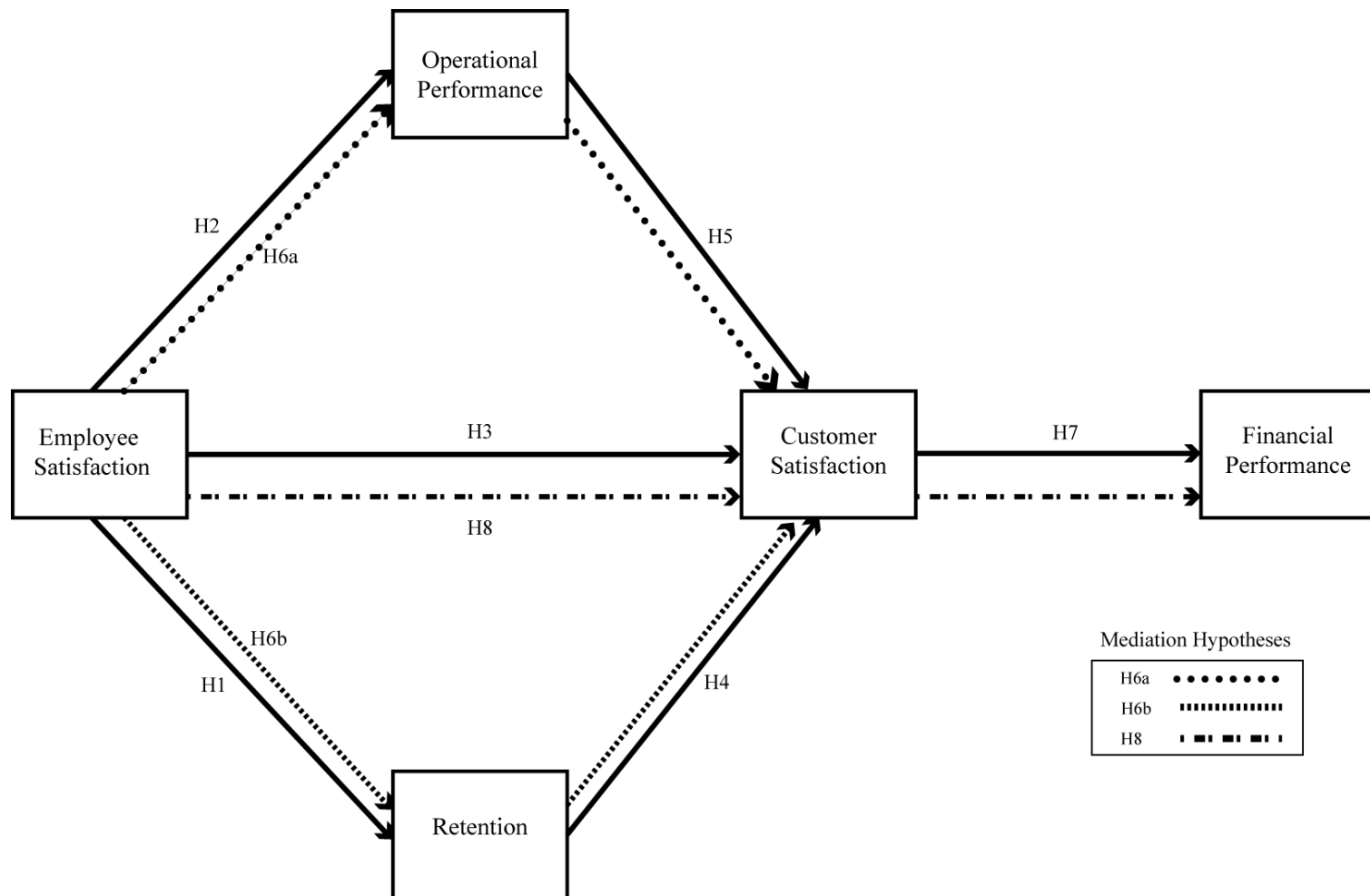


Figure 1: Conceptual Model of Causal Pathways from Employee Satisfaction to Financial Performance

An alternative explanation of this relationship is offered by path-goal theory:

“According to this view, people are motivated to do things which they feel have a high probability of leading to rewards which they value. When a worker says he is satisfied with his job, he is in effect saying that his needs are satisfied as a result of having his job. Thus, path-goal theory would predict that high satisfaction will lead to low turnover or absenteeism because the satisfied individual is motivated to go to work where his important needs are satisfied.”

(Lawler & Porter, 1967:22)

Further, the unfolding model of turnover (Lee & Mitchell, 1994) suggests that employee satisfaction stands to influence turnover levels within an organization. Under this conceptual frame, employees are proposed to begin the turnover process when a system shock—“a very distinguishable event that *jars* employees toward deliberate judgments about their jobs, and, perhaps, to voluntarily quit” (Lee & Mitchell, 1994: 60; emphasis original authors’). While shocks are not necessarily negative (they may be neutral or positive), one could imagine several situations in which such shocks could be dissatisfying to employees and eventually inspire a voluntary turnover decision. For instance, dissatisfaction with the clients of the company for which one works, dissatisfaction with work assignments, and dissatisfaction with the integrity of the organization all represent shocks that may inspire turnover (ibid.).

Although conducted primarily at the individual level of analysis, meta-analytical research consistently supports the existence of a modest (-.18 to -.26) negative relationship between employee satisfaction and turnover (Steel & Ovalle, 1984; Cotton & Tuttle, 1986; Carsten & Spector, 1987; Hom, Caranikas-Walker, Prussia, & Griffeth, 1992; Brown & Peterson, 1993; Tett & Meyer, 1993; Griffeth, Hom, & Gaertner, 2000). Further, the work of Tett & Meyer, who examined 155

studies, indicates that job satisfaction makes a unique contribution to the determination of turnover levels while Stedham & Mitchell (1996) determined that employee satisfaction played a larger role in employees' turnover decisions than pay and labor market conditions.

The limited research available at the unit- or organizational-level has, thus far, yielded similar results. In their unit-level study of 142 branches of a financial firm, Ryan, Schmit, & Johnson (1996) employed a cross-lagged model and found that employee satisfaction predicted future turnover ( $\beta = -.14$ ). Other unit-level research has supported the contention that stronger relationships between employee satisfaction and organizational outcomes may exist at higher levels of analysis. Ostroff (1992) examined 13,808 teachers within 298 schools to determine that employee satisfaction had a strong negative relationship with turnover ( $r = -.54$ ). Similarly, in their unit-level study Harter, et al. determined that satisfaction negatively predicted turnover ( $r = -.36$ ).

However, the results of this line of research have not been unequivocal and, thus, warrant future attention. Hurley & Estelami (2005) examined these constructs in a store-level path analysis of 175 convenience stores and concluded that evidence of a link between employee satisfaction and turnover was not present. Similarly, Loveman (1998) and Pritchard & Silvestro (2005) considered the potential for the same relationship within the context of the service-profit chain and found that employee satisfaction failed to account for a significant amount of variance in turnover measures. Despite these somewhat contradictory findings, other work at the unit-level and extant theory suggests:

*Hypothesis 1: Employee satisfaction is positively related to future employee retention.*<sup>1</sup>

## **Employee Satisfaction and Operational Performance**

The contention that employee satisfaction exhibits an effect on various measures of operational performance finds theoretical backing in several realms of the human resources and applied psychology literatures. Gouldner writes of the norm of reciprocity which “defines certain actions and obligations as repayments for benefits received” (1960: 170). Following this definition, it stands that employees who are satisfied with the benefits they receive from work will seek to fulfill the obligations those benefits require. Given that employees are generally limited to work behaviors in their reciprocation efforts (Organ, 1977), a causal path in which satisfaction spurs a desire to achieve equity in the work relationship through improved operational performance appears plausible.

Indeed, research has supported the view that employee satisfaction affects operational performance. Ostroff (1992) determined that teachers’ satisfaction with work was positively and significantly related to students’ academic performance. Satisfaction correlated with academic achievement measures of reading ( $r = .30$ ), math ( $r = .31$ ), social science ( $r = .24$ ) and the percentage of students who passed the courses in which they were enrolled ( $r = .20$ ). Similarly, Harter, et al. (2002) found that satisfaction predicted productivity ( $r = .20$ ). However, not all research on these constructs has shown a uniform direction, implying that the measures employed in a study may affect the nature of the relationship observed. Pritchard & Silvestro (2005) investigated 75 stores in a home improvement chain based in the United Kingdom and found that employee satisfaction correlated negatively with sales per full-time

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<sup>1</sup> Note that all hypotheses pertain to the unit-level of analysis.

employee ( $r = -.286$ ). While this result suggested that stores with more satisfied employees did less business, the authors did find a positive correlation between employee satisfaction and transaction size per store ( $r = .2256$ ) although this finding barely falls outside of the 95% significance level. Given the aforementioned theory as well as prior research, the following hypothesis is proposed:

*Hypothesis 2: Employee satisfaction is positively related to future operational performance.*

### **Employee Satisfaction and Customer Satisfaction**

The theoretical basis through which employee satisfaction holds the potential to influence customer satisfaction—“the consumer’s judgment that a product or service meets or falls short of expectations” (Gupta & Zeithaml, 2006: 720)—is posited by Bagozzi (1992). Under this model, employees make appraisals based on desired outcomes. Should those outcomes fail to occur, employees experience a negative emotional response and seek to reduce the unpleasantness of the experience. Should those desired outcomes occur, employees are hypothesized to react positively and seek to extend and/or share the outcome with others. Applied to the relationship between employee satisfaction and customer satisfaction at the unit-level, it would appear that a more satisfied workforce is more likely to experience desired work outcomes more strongly and frequently and, as a consequence, those experiences would be positively extended to interactions with customers (Schmit & Allscheid, 1995). Bowen, Gilliland, & Folger (1999) echo this view in their discussion of a “spillover effect” in which employee attitudes are posited to extend to interactions with customers.

In spite of this, Ryan, Schmit, and Johnson (1996) determined that employee satisfaction did not significantly predict future customer satisfaction, but rather that customer satisfaction predicted future employee satisfaction at the organizational level ( $\beta = .28$ ). The authors contended that this might be due to an organizational focus on customer satisfaction as a performance measure and the fact that a financial services firm was examined. Specifically, customers who have to contact employees usually do so because of financial problems. Thus, “customer satisfaction might be inversely related to the amount of contact with the organization.” (1996: 875).

Other work has called into question whether the link between employee and customer satisfaction exists at all. Returning to the service-profit chain, anecdotal evidence suggests that employee satisfaction positively affects customer satisfaction (Rucci, Kirn, & Quinn, 1998). However, direct tests of the chain have generally failed to uncover significant relationships between these two constructs (Loveman, 1998; Silvestro & Cross, 2000; Pritchard & Silvestro, 2005).

For the most part, however, empirical work has supported the idea that employee satisfaction positively correlates with customer satisfaction. Ostroff (1992) found that employee (teacher) satisfaction predicted student satisfaction with teachers ( $r = .24$ ) as well as overall student satisfaction ( $r = .44$ ). Similarly, Harter, et al. found that employee satisfaction was a significant predictor of customer satisfaction ( $r = .32$ ). In addition, in a cross-lagged, unit-level longitudinal analysis of a regional restaurant chain, Koys (2001) observed a strong and highly significant correlation ( $r = .61$ ) between employee satisfaction in Year 1 and customer satisfaction in Year 2. In a path analysis of data obtained from convenience stores, Hurley & Estelami (2005) observed a positive relationship between employee and customer satisfaction in both full ( $\beta = .26$ ) and reduced models ( $\beta = .19, p < .10$ ), although the latter figure was only marginally significant. Thus:

*Hypothesis 3: Employee satisfaction is positively related to future customer satisfaction.*

### **Employee Retention and Customer Satisfaction**

Human capital theory predicts a positive relationship between employee retention and customer satisfaction. To serve customers in a manner that imparts high service quality, employees must possess adequate knowledge of the service being offered as well as the skills necessary to deliver that service. As retention decreases, those stocks of human capital become depleted and should detrimentally effect the organization's ability to provide high-quality service and, by extension, customer satisfaction. Additionally, the service profit chain predicts that to the extent that an organization is able to retain its workforce, customer satisfaction will improve. Once more, little research directly examining employee retention exists, especially at the unit level. However, past unit-level work examining turnover and customer satisfaction appears to support the extant theory.

Ostroff (1992), for instance, found that teacher turnover was negatively related to student satisfaction with teachers ( $r = -.18$ ) as well as overall student satisfaction ( $r = -.26$ ). Additionally, Koys (2001) found that turnover negatively predicted customer satisfaction one year later ( $r = -.13$ ), but that the result was insignificant (this may have been due to the limited sample size utilized in the study). Pritchard & Silvestro (2005), in their analysis of the service-profit chain also found a negative correlation between turnover and customer satisfaction ( $r = -.392$ ). Loveman (1998) also observed a weak, but positive and significant, relationship between average employee tenure and customer satisfaction ( $\beta = .01$ ;  $p < .05$ ) in his service-profit-chain-based analysis of a commercial bank; further, employee tenure was also a significant predictor of the



percentage of customers that reported being “very satisfied” (i.e., answering 6 or 7 on a 7-point Likert-type scale measuring customer satisfaction) with the bank ( $\beta = .20$ ).

More recent analyses have also supported the existence of a negative relationship between turnover and customer satisfaction. Hurley & Estelami’s (2005) store-level analysis revealed a negative relationship between the logarithm of turnover and customer satisfaction in both full ( $r = -.17$ ) and reduced models ( $r = -.10$ ), although in the latter the relationship was marginally significant ( $p < .10$ ). Last, Morrow & McElroy (2007) also found a negative relationship between these constructs ( $r = -.61$ ) in their longitudinal analysis. Thus:

*Hypothesis 4: Employee retention is positively related to future customer satisfaction.*

### **Operational Performance and Customer Satisfaction**

Theory regarding the relationship between operational performance and customer satisfaction is largely relegated to the logic underlying Heskett, et al.’s (1994) service-profit chain. Under this conception, operational performance translates to increased quality or service value for customers, which itself drives improvements in customer satisfaction. Other theory on the relation between operational performance and customer satisfaction is mainly found in the strategic manufacturing and marketing literatures. Mirroring the logic of Heskett et al., this view generally posits that customers make an evaluation about the relative costs and benefits experienced in the consumption of a good or service. If high quality operational performance is present, the net value of the product or service increases relative to costs incurred, and customer satisfaction increases (Maiga & Jacobs, 2005).

The limited empirical evidence available has lent only mixed support to these theoretical propositions. Maiga & Jacobs, for instance, performed a unit-level structural equations analysis of 91 manufacturing plants and determined that operational performance was a significant and positive predictor of customer satisfaction ( $\beta = .58$ ). However, Pritchard & Silvestro (2005) failed to find correlations between operational performance (output quality) and measures of customer satisfaction in their cross-sectional study. Nonetheless, given the theory discussed:

*Hypothesis 5: Operational performance will be positively related to future customer satisfaction.*

### **Potential Mediated Relationships**

In addition to a direct relationship, a small amount of research and theory has proposed and investigated the potential that the relationships between antecedents and customer satisfaction are mediated. Ferris and colleagues, for instance, posit social context/organizational climate as a mediator of the relationship between human resource practices and organizational effectiveness (Ferris, Arthur, Berkson, Kaplan, Harrell-Cook, & Frink, 1998). Rogg, Schmidt, Shull, and Schmitt (2001) extend this idea by proposing that climate mediates the relationship between human resource practices and customer satisfaction at the unit level and, indeed, find evidence of such a relationship. Specifically, climate is viewed as improving service quality by functioning as a guide for employee behavior (Rogg, et al., 2001: 434). Further, empirical work by Schmit & Allschied (1995) determined that employee satisfaction positively influenced customer satisfaction through the mediating construct of service intentions (satisfaction  $\rightarrow$  service intentions,  $\beta = .74$ ; service intentions  $\rightarrow$  customer satisfaction,  $\beta = .37$ ). Additionally, the indicator of operational performance employed

in the current work—employee responsiveness—may function as a proxy of service climate and, thus, it is expected that this measure of unit performance will mediate the relationship between employee satisfaction and customer satisfaction. Formally:

*Hypothesis 6a: Operational performance will mediate the positive relationship between employee satisfaction and customer satisfaction.*

Returning to human capital theory, one finds an avenue by which retention can mediate the relationship between employee and customer satisfaction. Specifically, to the extent that a firm is able to retain its employees, knowledge stocks within the workforce should increase, enabling that workforce to provide more accurate information and help more quickly to customers with the ultimate result of improving customer satisfaction. Thus:

*Hypothesis 6b: Employee retention will mediate the positive relationship between employee satisfaction and customer satisfaction.*

## **Customer Satisfaction and Financial Performance**

Customer satisfaction is a subject that has long received attention in the human resources as well as accounting and marketing literatures. The construct is generally conceived of as transaction-specific or an overall measure of consumers' approval of goods or services over a period of time (Anderson, Fornell, & Lehman, 1994). Anderson, et al. indicate that overall customer satisfaction is a better indicator of a firm's future performance and, further, that "high customer satisfaction should indicate increased loyalty for current customers, reduced price elasticities, insulation of current customers from competitive efforts, lower costs of future transactions,

reduced failure costs, lower costs of attracting new customers, and an enhanced reputation for the firm” (1994: 55).

As mentioned before, customer satisfaction and financial performance are among the last links in the service-profit-chain. The former is proposed to drive the latter through increased repeat business, customer retention, and referral of new customers (Heskett, et al., 1994). Empirical work indicates, however, that the relationship between these two constructs may be less simple than one might expect. Tornow & Wiley (1991), for example, find a negative correlation between customer satisfaction and gross profits ( $r = -.17$ ). However, Tornow & Wiley’s analysis is cross-sectional and other authors have indicated that “in any given time period, a multitude of factors could mask the true relationship between these constructs” (Bernhardt, Donthu, & Kennett, 2000: 162). Indeed, Bernhardt, et al., who employ a longitudinal analysis, find a positive relationship between change in customer satisfaction and change in profit and sales ( $\beta = .42$ ). Later work by Guo, Kumar, & Jiraporn (2004) found evidence of a positive lagged relationship between customer satisfaction and return on assets ( $\beta = .29$ ) and further discovered that, in a cross-sectional analysis, the two constructs were negatively correlated ( $\beta = -.22$ ). Similarly, Banker, Potter, & Srinivasan (2005) examined customer satisfaction and gross profits in a hotel chain and determined that there was a six-month lag between the two constructs.

Other researchers have found similar results. Anderson, et al. (1994) considered the same constructs using the Swedish Customer Satisfaction Barometer and found significant relationships between customer satisfaction and return on investment ( $\beta = .40$ ) and between change in customer satisfaction and change in ROI ( $\beta = .76$ ).

Anderson, Fornell, & Mazvancheryl (2004) also found a significant and positive relationship between customer satisfaction and Tobin’s  $q$  in a lagged analysis

( $\beta = .16$ ). Last, Yoo & Park (2007) employed a structural equations analysis to investigate a sample of 129 hotels and found a path coefficient of .47 between customer satisfaction and financial performance. Given these empirical results as well as the aforementioned theory, the following hypothesis is proposed:

*Hypothesis 7: Customer satisfaction is positively related to future financial performance.*

### **Employee Satisfaction and Financial Performance**

Theory concerning the link between employee satisfaction and firm financial performance essentially boils down to behavioral intentions. This suggests that positive attitudes towards the organization are the antecedents of behavioral intentions that ultimately translate to prosocial behavior and improved performance. In some contrast to individual-level studies, unit-level empirical work appears to support this theory. Pritchard & Silvestro (2005), for instance, determined that a positive relationship existed between employee satisfaction and revenue growth ( $r = .28$ ). Harter, et al. found that employee satisfaction was a significant predictor of profitability ( $r = .15$ ) in their unit-level meta-analysis. Koys' (2001) longitudinal analysis found similar magnitudes in the relationships between employee satisfaction and profit as a percentage of sales one year later ( $r = .15$ ) and employee satisfaction and profit one year later ( $r = .06$ ) although neither of these results was statistically significant. Nonetheless, the relationships found between employee satisfaction and financial performance at this level of analysis remain weak to moderate, and indeed some contradictory results have been found. For instance, Schneider, Hanges, Smith, and Salvaggio (2003) examined a longitudinal data set and found that financial

performance was a stronger predictor of overall employee satisfaction than the reverse.

Despite these findings, the service profit chain suggests that customer satisfaction will mediate the relationship between employee satisfaction and financial performance. Indeed, anecdotal evidence (e.g., Rucci, et al., 1998) supports this contention although empirical evidence supporting a mediation effect among these constructs has remained somewhat elusive. Gelade & Young (2005) examined a relevant model within four retail banks. When each bank was considered separately, no statistically significant mediation effect emerged. When samples were combined, however, the proposed mediation effect “just reaches significance” (15) although the effect was reported to be too small to be practically important. Returning to the previous discussion of proximity and the relatively long causal distance between employee satisfaction and financial performance, the weakness and inconclusiveness of such results may not be so surprising. Specifically, in a large organizational setting, many factors combine to ultimately determine financial performance. Given the intermediate outcomes through which the effect of employee satisfaction must be expressed before finally influencing a financial outcome as well as the virtually assured contamination of financial measures by other factors affecting organizational operations, a mediation-based model—in which a direct and significant relationship between employee satisfaction and financial performance is a necessity—may be inappropriately specified. Rather, a model specifying “purely indirect” effects may be more accurate. Nonetheless, in keeping with extant theory:

*Hypothesis 8: Customer satisfaction will mediate the positive relationship between employee satisfaction and future financial performance.*

## **CHAPTER 3**

### **METHODS**

#### **Sample and Data**

The sample population for the study consists of 782 stores in a large U.S.-based home improvement retailing chain, which at the time of data collection employed roughly ninety-six thousand employees. The retailer provides a wide variety of services and products primarily focused around residential development, remodeling, and maintenance to both individual “do-it-yourself” customers as well as contractors. Additionally, the company is a major supplier of home appliances and associated installation services. Because of the extensive records kept by the company, which included not only data pertaining to the variables of interest in the study but also several measures that serve well as controls, the chain presented a prime opportunity to examine the heretofore discussed hypotheses. Further, a nearly identical format and operational protocol among stores as well as relatively homogenous work tasks among units helped to control for potential effects of unobserved covariates.

Data were obtained for fiscal years 2003 and 2004 for all variables except employee retention. All measures were acquired at the store level from archival company records—i.e., measures were aggregated, where appropriate, by the company to the store level prior to analysis.

#### **Measures**

Measures were selected with two general criteria in mind. First, a range of measures were chosen following the aforementioned hierarchy of human resource, organizational, and financial outcomes proposed by Dyer (1984). In keeping with his suggestion to include variables at all three levels of outcomes, a set of measures was

selected that tapped each level. Second, in an attempt to mitigate the possible effects of common methods variance prevalent in much past research on the satisfaction-performance relationship, measures from different sources and of different types were utilized. Several authors have recognized the ability of multiple measures from differing sources to limit the potential for common methods variance to influence observed relationships between constructs (e.g., Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Because measures are obtained from multiple sources—i.e., objective performance/financial measures as well subjective employee- and customer-generated measures—the potential for common methods bias is mitigated.

***Employee satisfaction.*** Data on employee satisfaction were generated from the administration of the Gallup Workplace Audit, a 13-item questionnaire developed by The Gallup Organization which contains an overall satisfaction item and twelve additional items scored on a 5-point Likert-type scale (1 = strongly agree to 5 = strongly disagree and a sixth unscored response when an employee either does not know an answer or an item does not apply to the work situation). The twelve additional items in the audit are intended to “measure employee perceptions of work characteristics” and “the quality of people-related management practices in business units.” (Harter, et al., 2002: 269).<sup>2</sup> While these items are intended to measure employee engagement and, indeed, Harter and colleagues seek to distinguish engagement from a “pure” satisfaction measure, the authors report high convergence (.77) between an overall measure of job satisfaction and the mean of the twelve remaining items and further, in their meta-analysis of 8,127 business units, report a true score correlation of .91. Beyond this, Harter, et al. (2002) reported strikingly

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<sup>2</sup> While the items on the survey are proprietary and cannot be reprinted here, exact wording of the questionnaire may be found in: Harter, Schmidt, & Hayes, 2002. Business-unit-level relationship between employee satisfaction, employee engagement, and business outcomes: A meta-analysis. *Journal of Applied Psychology*, 87 (2): 269.



similar predictive validities between an overall measure of satisfaction and the Gallup Workplace Audit in predicting business-unit performance with the former exhibiting a true score correlation of  $\rho = .37$  and the latter exhibiting a correlation of  $\rho = .38$  (ibid.).

Because data were aggregated to the store level by the company before they were received, individual-level scores were not available for analysis. As a result, variance among satisfaction scores due to stores cannot be assessed nor can reliabilities. Despite these shortcomings, the reliability of the employee satisfaction scores at the unit-level is likely high. In their meta-analysis of 4,172 business units, Harter and colleagues (2002) report a Cronbach's alpha of .91 at the unit level. Additionally, given an average unit size of 123 employees per store and the fact that the means of employee responses at the store level are assessed, reliability among stores should be high.

Surveys were administered at the start of the fourth quarter of the fiscal year in 2003 (Year 1) and 2004 (Year 2). Average satisfaction in Year 1 was 3.53 ( $\sigma = .26$ ) and was 3.61 ( $\sigma = .27$ ) in Year 2.

***Employee Retention.*** Employee retention was calculated at the store level as the ratio of the number of employees still working for the organization in August of 2004 (that were employed by the organization in 2003) to the total number of employees working for the organization in 2003 multiplied by 100 (yielding a percentage value). More formally:

$$\frac{Employees_{2004} | Employees_{2003}}{Employees_{2003}} \times 100$$

The mean retention rate for the 782 stores in the sample was 72.02 percent ( $\sigma = 7.28$ ).

A measure of employee retention was selected over turnover in this study for two reasons. First, given that the firm operates in the retail industry and large seasonal fluctuations in both demand for products and demand for labor occur, some positions may turn over several times during the year. For instance, many employees are hired only seasonally during periods of high demand and then exit the organization rather quickly; including these workers would distort (and likely inflate) the observed effects of employee satisfaction on employee quit behavior. Thus, while turnover may provide an accurate picture of the relationship between job satisfaction and employee decisions to stay with or exit a firm in other settings, the characteristics of the sample population suggest that retention is a superior measure in the current case.

Second, the current study aims to examine the potential positive effects that employee retention may have on customer satisfaction and, eventually, financial performance. The theory is that a more stable employment base over time will increase human capital stocks (e.g., product knowledge, store layout) and strengthen social capital within the organization (e.g., knowing which co-workers are “subject matter experts” in such departments as plumbing, electrical, and appliances and using this information to improve employee coordination within the firm). Stable employment is more accurately assessed using a measure of employee retention than a measure of employee turnover.

***Operational performance.*** Operational performance was measured as employee responsiveness and was calculated based on the time taken for employees to respond to customer requests for help initiated by push-button (“call for help”) boxes located throughout each store. When in need of assistance, customers press these buttons which alert staff. Upon activation, the call boxes monitor the time needed for employees to arrive and deactivate them by pressing another (hidden) button. The organization then assigns average scores to respective stores. Higher scores indicated

faster response times. In Year 1 the mean raw score for employee responsiveness was .84 ( $\sigma = .83$ ; scaled from 0 to 3) and in Year 2 the mean raw score for employee responsiveness was .78 ( $\sigma = .80$ ; scaled from -1 to 3). Because the accounting procedures of the organization changed from Year 1 (2003) to Year 2 (2004) with respect to this metric, centering/standardizing the variables was necessary for comparability and the standardized values are used in the following analyses.

***Customer satisfaction.*** Overall (as opposed to transactional) customer satisfaction was measured via the administration of phone- and internet-based surveys given to customers after making purchases. Participation in the surveys was encouraged through the provision of a discount on future purchases. Also, a request by the company for participation was provided on the receipt for a given purchase along with a phone number and an internet address through which the survey could be accessed. The survey contained two items assessing customers' general satisfaction with the company over time as well as satisfaction relative to competitors:

1. Thinking about all your experiences with company X during the last 12 months, please rate your overall satisfaction with X.
2. Compared with other home retailers, how would rate your overall satisfaction with X.

Both items were scored on a 7-point Likert-type scale (from 1 = completely dissatisfied to 7 = completely satisfied). The second item contained an additional scoring option if the customer did not shop at any other home retailers. Based on the responses, the organization then assigned a score to each store with higher scores indicating higher customer satisfaction. In Year 1 (2003), the mean customer satisfaction score was .08 ( $\sigma = 1.41$ ; scaled from -6 to 6) and in Year 2 (2004) the mean score was .628 ( $\sigma = .73$ ; scaled from -1 to 3). Once again, because calculation of

scores by the organization changed from Year 1 to Year 2 they were centered at zero in the following analyses to facilitate comparability.

***Financial performance.*** Financial performance was operationalized as profit per square foot and calculated by dividing profit per store (revenue minus costs) by each respective store's square footage. Profits were scaled by square footage since larger stores were expected to generate higher profits due to economies of scale and a more expansive product mix. Further, adjusting the profit variable helps to control for differences in economic and geographic conditions among stores—i.e., large stores are likely to be located in more densely populated locales where a more expansive potential customer base and higher levels of residential development may be present. Mean square footage at Year 1 was 115,105 ( $\sigma = 9038$ ). Mean profit was \$3.46 million ( $\sigma = \$2.27$  million) in Year 1 and \$3.91 million ( $\sigma = \$2.64$  million) in Year 2. Average profit per square foot in Year 1 was \$30.54 ( $\sigma = \$20.47$ ) and in Year 2 was \$34.49 ( $\sigma = \$23.64$ ).

### **Control Variables**

Several factors relating to stores were controlled with the aim of further isolating the relationships between the aforementioned variables of interest.

***Store age.*** Store age, measured as the number of weeks from a store's initial opening until the start of fiscal year 2003 (Year 1), was included in the set of controls since older stores were expected to have larger, older, and more stable customer bases and, potentially, higher tenured workforces. Both of these considerations could contaminate relationships between the variables of interest—e.g., longer tenured workforces could be less satisfied *ceteris paribus* than those found in newer stores or older customer bases may be less subject to price elasticities and, thus, might affect profitability.

***Number of employees.*** The number of employees, measured as the total number of full- and part-time employees at the time of the Year 1 satisfaction survey was controlled since this was expected to relate positively to measures of employee satisfaction, employee responsiveness, employee retention, customer satisfaction, and negatively to profits.

***Transactions per square foot.*** Transactions per square foot was measured as the number of individual purchases made in Year 1 divided by the number of square feet in each store. The variable was scaled by square feet as, all other things equal, larger stores were expected to have more transactions per year. The number of transactions per square foot was included in the set of controls since it is expected to relate negatively to employee satisfaction, employee retention, employee responsiveness, and customer satisfaction (busier stores might have less satisfied employees since workload is higher and these less satisfied employees might be less willing to maintain employment and less able to quickly accommodate customer requests). Also, all other things equal, transactions per square foot should relate positively to profit.

***Distribution center.*** Finally, a set of eleven dichotomous indicators corresponding to the company's eleven national distribution centers was included to account for regional differences among the stores. This set of indicators again helps to limit the effects of local economy and geography in influencing relationships between the variables of interest and is also included to account for other unobserved characteristics of stores related to geographic location (e.g., stores in colder, wetter climates such as the northeast United States likely have different product mixes than stores in hotter, dryer climates such as in the southwestern U.S.).

## **Analyses**

To test the proposed hypotheses, a path analysis was conducted using AMOS 16.0. Given the directional nature of the model and the multiple hypotheses to be tested as well as the potential for one exogenous variable to exhibit effects on multiple endogenous components of the model directly and indirectly, a statistical procedure allowing for the evaluation of a simultaneous set of equations was ideal. However, some important, but frequently overlooked, considerations must be noted.

First, extant structural equations modeling (SEM) examinations of a wide range of phenomena both inside and outside the realm of social sciences generally lack control variables—Fletcher, Germano, and Selgrade (2006) found, in their review of social-psychological literature, that only 32% of articles employing SEM used controls. Some contend that most SEM models do not require control variables to be accurate. But their absence may, in fact, have more to do with the methodological difficulties associated with the inclusion of additional variables in models that are not of direct interest and often explain little additional variance in the subject being studied (*ibid.*). More specifically, the inclusion of an adequate set of controls can reduce the number of degrees of freedom available within a given model due to the geometric relationship between the presence of a control variable and the number of paths to be estimated. In many cases, this may prevent the model itself from being identified. Also, commonly employed indices in SEM impose a penalty on the inclusion of these extra paths when assessing model fit, further discouraging their use.

However, “working the numbers” is hardly a legitimate reason to avoid the use of relevant control variables, especially in the social sciences where a host of factors external to the model under consideration may mask the true relationships between measures. Rather, control variables should be employed whenever possible in empirical work when they are applicable.

One avenue to address these issues is found through partialling out the effects of covariates prior to running a structural analysis. This is especially useful when the effects of individual covariates are not as important as the net effect of the set of controls as a whole or when control variables are not continuous and therefore violate statistical assumptions of SEM (ibid.). While the utilization of this method is not widespread by any means, it has appeared in SEM-based considerations of social-psychological phenomena in the past (e.g., see Newcomb & Bentler, 1988 and Kammeyer-Mueller & Wanberg, 2003). Under this method, the variables of interest are regressed onto a set of covariates,  $Z$ , yielding intercorrelations between the variables with the effects of the covariates (controls) removed. Importantly, Fletcher, et al. (2006) found in a simulation comparing explicit modeling of controls in SEM to the “partialling out” procedure that the two methods only differed by .001 in their estimation of path coefficients and by .0001 in their estimation of standard errors.

While performing this procedure weakens the power of further statistical tests, the large sample size in the current study warrants its use, especially since dichotomous indicators are included in the set of control variables. Specifically, the sample contains 782 observations per variable; after partialling out effects of controls, the loss of statistical power due to a decrease in degrees of freedom remains only minor ( $N = 767$ ). *Table 1* presents a comparison of partial and zero-order correlations for the variables of interest. An examination of the table suggests that influence of the set of controls as a whole is significant and thus, their inclusion in further analyses is warranted.

A second concern surrounds the use of correlation rather than covariance matrices to carry out path analyses. Theory underlying SEM is founded upon the analysis of covariance matrices and thus, the partial correlation matrix must first be re-scaled into its corresponding partial covariance matrix (see *Table 2*). Although many

TABLE 1

Zero-Order and Partial Correlations <sup>a</sup> (Z = Age, Number of Employees, Transactions per Square Foot, Distribution Center)

	M	SD	1	2	3	4	5	6	7	8								
1 Employee Satisfaction Year 1	3.53	.26																
2 Employee Satisfaction Year 2	3.61	.27	.44**	.42**														
3 Retention	72.02	7.29	.16**	.21**	.06	.07												
4 Employee Responsiveness Year 1	0.00	1.00	.26**	.27**	.19**	.16**	.05	.08*										
5 Employee Responsiveness Year 2	0.00	1.00	.19**	.17**	.30**	.24**	.03	.06	.60**	.53**								
6 Customer Satisfaction Year 1	0.00	1.00	.12**	.08*	.08*	0.05	.13**	.14**	.10**	.12**	.07*	.08*						
7 Customer Satisfaction Year 2	0.00	1.00	.14**	.10**	.16**	.10**	.13**	.14**	.18**	.18**	.23**	.22**	.34**	.29**				
8 Profit per Square Foot Year 1	30.54	20.48	.02	.01	-.02	-0.01	.10**	.06	-.18**	.03	-.16**	.08*	.16**	.23**	.09*	.20**		
9 Profit per Square Foot Year 2	34.49	23.64	.03	.05	-.03	0.04	.09**	.07*	-.17**	.10**	-.20**	.08*	.17**	.28**	.08*	.24**	.93**	.77**

<sup>a</sup> Partial correlations in boldface; N = 782 for zero-order corr.; N = 767 for partial corr.

\*\*. Correlation is significant at 0.01 level

\*. Correlation is significant at 0.05 level

TABLE 2

Partial Covariances (Z = Age, Number of Employees, Transactions per Square Foot, Distribution Center)

	1	2	3	6	7	8	9	10	11
1 Employee Satisfaction Year 1	0.06652	0.02912	0.39757	0.07063	0.04356	0.02130	0.02552	0.03047	0.30473
2 Employee Satisfaction Year 2	0.02912	0.07369	0.12975	0.04224	0.06532	0.01288	0.02812	-0.02639	0.25885
3 Retention	0.39757	0.12975	53.06977	0.57438	0.45346	0.99151	0.99309	8.14763	12.28056
6 Employee Responsiveness Year 1	0.07063	0.04224	0.57438	1.00000	0.53291	0.12397	0.17691	0.62473	2.30025
7 Employee Responsiveness Year 2	0.04356	0.06532	0.45346	0.53291	1.00000	0.07666	0.21523	1.56806	1.84999
8 Customer Satisfaction Year 1	0.02130	0.01288	0.99151	0.12397	0.07666	1.00000	0.29176	4.60251	6.61701
9 Customer Satisfaction Year 2	0.02552	0.02812	0.99309	0.17691	0.21523	0.29176	1.00000	4.02637	5.66450
10 Profit per Square Foot Year 1	0.03047	-0.02639	8.14763	0.62473	1.56806	4.60251	4.02637	419.21498	371.46200
11 Profit per Square Foot Year 2	0.30473	0.25885	12.28056	2.30025	1.84999	6.61701	5.66450	371.46200	558.80185



published SEM analyses make use of correlation matrices, this convention presents important problems, especially with regard to the estimation of the chi-square test and standard errors (S.E.). In fact, “most SEs (and therefore significance tests) reported in journal articles that model correlation matrices are probably wrong” (Bentler, Bagozzi, & Cudeck, 2001). Because SEM methods are based on maximum likelihood estimation and this method is based on the covariance matrix, using a correlation matrix to run an analysis will yield fit statistics and standard errors of parameter estimates that will differ from those generated from a covariance matrix using identical data (Bentler, et al., 2001; Cudeck, 1989). To avoid this problem and ensure that the conclusions reached through the following analyses are correct, the partial correlation matrix (in bold) in *Table 1* was re-scaled into the partial covariance matrix presented in *Table 2*. A correlation,  $\rho$ , is equal to the covariance between two variables divided by the product of their respective standard deviations:

$$\rho_{x,y,z} = \frac{\text{cov}_{x,y,z}}{\sigma_x \sigma_y}$$

Thus, one can generate the partial covariance table by multiplying the partial correlations from *Table 2* by the appropriate standard deviations. That is:

$$\text{cov}_{x,y,z} = \rho_{x,y,z} (\sigma_x \sigma_y)$$

The partial covariance matrix in *Table 2* was then input into AMOS 16.0 and a path analysis testing the aforementioned model was run. To evaluate model fit, the chi-square value ( $\chi^2$ ), normed fit index (NFI), comparative fit index (CFI), and root

mean square error of approximation (RMSEA) were used due to their extensive and regular appearance in studies employing structural analysis.

Third, normal theory assumptions inherent to SEM must be considered. Multivariate nonnormality can inflate chi-square values and lead to rejection of theoretically adequate models as well as underestimate standard errors, which may cause insignificant paths to appear significant (Byrne, 2000). Despite this, only a small proportion of SEM analyses recognize these assumptions and even fewer test for violations of them (ibid.). While, in general, the variables in this study individually exhibited remarkable normality, pre-analysis of the raw data in AMOS revealed evidence of non-normality in their joint multivariate distribution. Specifically, an examination of the joint multivariate normality yielded a kurtosis value of 10.08 and a critical ratio of 14.39. Thus, the Bollen-Stine bootstrap adjusted p-value (Bollen & Stine, 1992) was used to evaluate model fit so that robust estimations of standard errors could be reached without the assumption of multivariate normality.

Given the goal of estimating a population characteristic,  $\theta$ , bootstrapping refers to a statistical procedure through which the sampling distribution of the statistic  $\hat{\theta}$  (within the sample) is empirically derived without strong distributional assumptions. Under this method, the sample is treated as if it were the population and Monte Carlo sampling is employed to build “an estimate of the sampling distribution by drawing a large number of samples of size  $n$  randomly from a population, and calculating the statistic for each of these samples” (Mooney & Duval, 1993: 10). Because these samples are taken with replacement—i.e., some values from the original data may appear more than once and others may not appear at all—the estimated values of the statistic for each resample,  $\hat{\theta}^*$ , are subject to small and random variation from the original sample. Thus, bootstrapping functions on the premise that “a relative frequency distribution of these  $\hat{\theta}^*$ ’s calculated from the resamples is an estimate of

the sampling distribution of  $\hat{\theta}$ ” (ibid.). In the current case, an analogous procedure is applied to the structural model under investigation. As before, a random sample of cases is taken from the sample population. In this case, however, the resamples are used to generate a covariance matrix  $\mathbf{S}^*$  for a given resample. The proposed model is then fit to this covariance matrix by minimizing the maximum likelihood function for possibilities of  $\hat{\theta}$  and a value  $\hat{\theta}^*$  that minimizes the likelihood function is calculated. This entire process is repeated many times. Bollen & Stine (1992), however, make note of the fact that this “naïve bootstrapping of the chi-square statistic for structural equation models is inaccurate” (213) because it overestimates the mean and variance of the bootstrap distribution.

Further, the procedure above may be compromised by nonnormality in a given resample. Even if the samples come from data with a normal joint multivariate distribution, the sample drawn through bootstrapping may not exhibit distributional properties identical to the population. Bollen & Stine correct for these problems by modifying the procedure above such that the square root of the matrix of bootstrapped values is used to generate the test statistic rather than the original observations. The result is a procedure that can accurately measure a model test statistic when the joint multivariate distribution of the data is nonnormal. Beyond this, two other considerations must be taken into account when using a bootstrap procedure—sample size,  $n$ , and the number of resamples to be taken,  $B$ . Mooney & Duval (1993) indicate only slight improvement in the robustness of statistical conclusions for  $B > 1000$ ; however, in order to ensure accuracy, two thousand resamples were taken to test the proposed model in the current study. Further, bootstrap procedures are considered robust for sample sizes greater than thirty. Given the adjusted sample size of  $n = 767$  the bootstrap’s applicability for the current analysis appears warranted (further, even the covariance matrix satisfies this requirement with 61 separate observations).

## CHAPTER 4

### RESULTS

*Table 1*, as noted, presents descriptive statistics and zero-order correlations between all variables of interest as well as partial correlations between the variables of interest with the effects of the set of control variables (store age, number of employees, transactions per square foot, and distribution center) removed. (A complete table of all zero-order correlations between variables of interest as well as controls may be found in the *Appendix*.) As suggested by Hypotheses 1 and 2, employee satisfaction was significantly and positively correlated with both employee retention ( $r = .21, p < .01$ ) and employee responsiveness ( $r = .27, p < .01$ ). Employee satisfaction also correlated positively and significantly with customer satisfaction one year later ( $r = .10, p < .01$ ), indicating initial support for Hypothesis 3. Interestingly, no significant correlation was found between employee satisfaction and financial performance operationalized as profit per square foot either concurrently ( $r = .01, NS$ ) or one year later ( $r = .05, NS$ ) and thus, no initial support was found for Hypothesis 8.

Hypothesis 4 predicted a positive relationship between employee retention and future customer satisfaction and initial support for this hypothesis was found ( $r = .14, p < .01$ ). Similarly, Hypothesis 5 predicted a positive relationship between employee responsiveness and customer satisfaction; initial support for this hypothesis was found in the correlation matrix ( $r = .18, p < .01$ ). Initial support for Hypothesis 7, which predicted a positive relationship between customer satisfaction and financial performance, was also demonstrated ( $r = .24, p < .01$ ). Because Hypotheses 6a and 6b proposed mediation effects, they cannot directly be assessed by examination of correlations. However, early support for these effects is indicated by the significant relationships in the predicted directions between (a) employee satisfaction and

employee responsiveness and employee retention, respectively, and between (b) employee satisfaction and customer satisfaction, and among (c) employee responsiveness, employee retention, and customer satisfaction.

### **Proximity**

Beyond demonstrating some initial support for the proposed hypotheses, examination of the correlation matrix reveals a pattern of decreasing magnitudes of relationships as the causal distance between two variables increases. Recall *Figure 1* in which a conceptual model of causal pathways between employee satisfaction and financial performance is proposed—employee satisfaction should have its most immediate effects on unit performance and retention, next on customer satisfaction, and last on financial performance. Following this conceptual model, magnitudes are expected to decrease for two reasons: (a) the increasing distance, causally, between two variables within the model and (b) the increasing contamination of measures found as one progresses toward bottom-line/financial indicators (Dyer, 1984).

Indeed, this pattern emerges for both the zero-order correlations as well as partial correlations in both concurrent and predictive relationships. In column one of *Table 1*, for instance, the magnitude of relationships between employee satisfaction in Year 1 and its immediate outcomes (employee retention and employee responsiveness) ranges from  $r = .17$  to  $r = .27$ ; magnitudes of relationships between employee satisfaction and its next most immediate outcome, customer satisfaction, range from  $r = .08$  to  $r = .10$ ; finally, magnitudes decrease to  $r = .01$  to  $r = .05$  between employee satisfaction and financial performance. A similar pattern of decreasing magnitudes is observed for employee satisfaction in Year 2 (column two).

This pattern of decreasing magnitudes, in fact, holds for all variables of interest. The effects of employee retention on other variables decrease as one moves

from immediate ( $r = .14$ ) to financial outcomes ( $r = .06$  and  $r = .07$ ). Similarly, employee responsiveness in Year 1 shows decreasing magnitudes of relationships as one progresses from immediate ( $r = .12$  to  $r = .18$ ) to financial outcomes ( $r = .03$  to  $r = .10$ ) although the results from employee responsiveness in Year 2 are less clear (see column five). While there is no comparison with other less proximal measures, customer satisfaction exhibits significant and positive relationships with financial performance in both Year 1 and Year 2 ( $r = .20$  and  $r = .29$ ).

Given that decreases in magnitudes are due either to increases in causal distance or to increasing contamination of measures as one approaches financial outcomes, or both, the relative magnitude of the relationship between customer satisfaction and financial performance is important for two reasons. First, given the proposed causal distance between customer satisfaction and financial performance proposed in *Figure 1*, one would expect this relationship to be relatively strong. The relationship is indeed relatively strong and similar in magnitude to other immediate relationships proposed in *Figure 1*, thus lending support to the proposition of differential magnitudes under Dyer's (1984) framework. Beyond this, and more important, this finding, while hardly indicative that contamination of financial outcome measures is not present, shows that contamination is not so severe as to mask the relationship between financial performance and other variables. Specifically, the sources of the customer satisfaction (customer responses to a survey) and financial performance measures (company records) are distinct. Thus, even if such measures are subject to contamination, it is unlikely that a common source of such contamination exists. Because a significant and relatively strong (i.e., compared to other observed relationships within the data) relationship is observed, one can conclude that while contamination may exist in the financial performance measure itself, the influence of this contamination is not so large as to completely discount the influence of causal

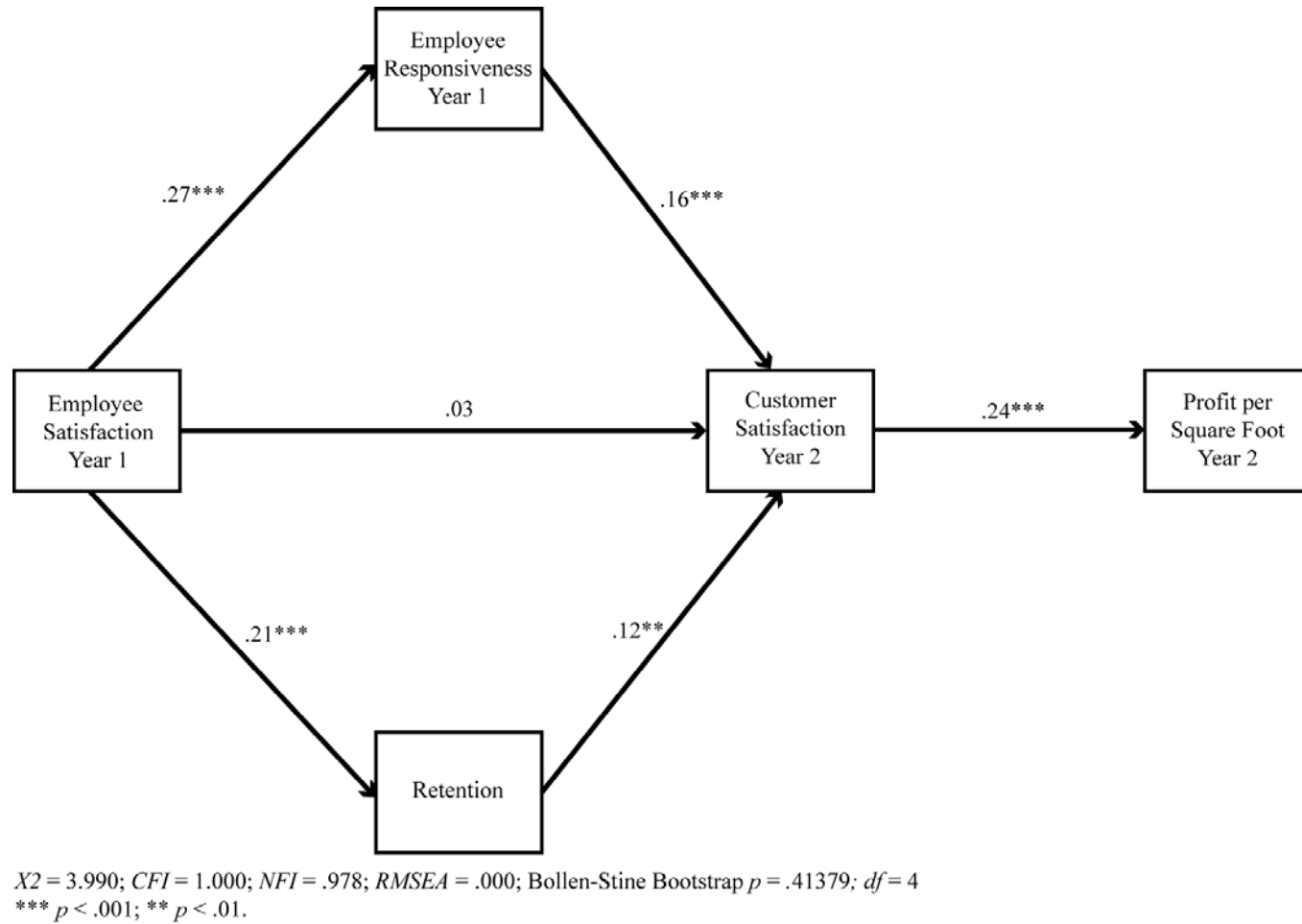
distance. More succinctly, although contamination may be present, at least some of the pattern of decreasing magnitudes is likely explained more by increasing causal distance between the variables of interest than by contamination of measures.

### Tests of the Full Model and Hypotheses

*Figure 2* shows the fitted structural model as proposed by the aforementioned hypotheses. Employee satisfaction in Year 1 relates to employee responsiveness and employee retention in Year 1; both of these variables relate significantly and positively to customer satisfaction in Year 2; finally, customer satisfaction in Year 2 relates positively and significantly to profit per square foot in the same year. The model demonstrates acceptable levels of global fit ( $\chi^2 = 3.990$ ,  $df = 4$ ; RMSEA = .000; CFI = 1.000; NFI = .978; Bollen-Stine adjusted  $p = .414$ ). Note that the Bollen-Stine procedure tests the hypothesis that the model is “true” and thus, a high value—i.e.,  $p > .05$ —is desirable.

Hypothesis 1 tested the proposition that employee satisfaction in Year 1 would predict future employee retention. A significant and positive path ( $\beta = .212$ ;  $p < .001$ ) between these variables supports this hypothesis (unstandardized estimate,  $b = 5.997$ ; S.E. = .997). The model also demonstrates a significant and positive relationship between employee satisfaction and future employee responsiveness, indicating support for Hypothesis 2 ( $\beta = .274$ ;  $p < .001$ ;  $b = 1.062$ ; S.E. = .135).

Hypothesis 3 tested for the presence of a direct relationship between employee satisfaction in Year 1 and customer satisfaction in Year 2. In contrast to the relationship suggested by the correlation matrix, however, the path between these two was small and insignificant ( $\beta = .030$ ;  $p = .416$ ;  $b = .118$ ; S.E. = .145) and thus,



**Figure 2: Fitted Path Model of Employee Satisfaction, Intervening Variables, and Firm Profit per Square Foot. Weights are standardized.**



Hypothesis 3 is not supported. Given this result, a further supplemental analysis was conducted in which customer satisfaction in Year 1 was substituted for the original indicator as laid out by the model. This analysis revealed once again a small and insignificant path ( $\beta = .028$ ;  $p = .465$ ;  $b = 107$ ; S.E. = .146), suggesting that the specified time lag is not responsible for the lack of relationship between these two variables.

Analysis revealed a positive and significant relationship between employee retention and future customer satisfaction ( $\beta = .117$ ;  $p = .001$ ;  $b = .016$ ; S.E. = .005) and therefore supported Hypothesis 4. Hypothesis 5 proposed a positive relationship between employee responsiveness and future customer satisfaction; in this case, a significant and positive path was found ( $\beta = .159$ ;  $p < .001$ ;  $b = .159$ ; S.E. = .037). Since both of these variables were standardized prior to analysis, the similarity of standardized and unstandardized path estimates is to be expected.

Hypotheses 6a and 6b tested for the potential for an indirect effect of employee satisfaction in Year 1 on customer satisfaction in Year 2 through employee retention and employee responsiveness, respectively. *Figure 2* indicates significant relationships along the path employee satisfaction  $\rightarrow$  employee responsiveness  $\rightarrow$  customer satisfaction and along the path employee satisfaction  $\rightarrow$  employee retention  $\rightarrow$  customer satisfaction. In this full model examination, the direct path from employee satisfaction to customer satisfaction is insignificant, suggesting support for these hypotheses. However, supplemental analyses—following Baron & Kenny (1986)—testing a smaller portion of the model were conducted to ensure the robustness of this result and to elucidate the potential for the respective mediating effects of employee responsiveness and employee retention. First, the isolated direct relationship between employee satisfaction and customer satisfaction was assessed and yielded a significant path coefficient ( $\beta = .099$ ;  $p = .006$ ). Next, the isolated direct relationships were

examined for employee satisfaction→employee responsiveness ( $\beta = .274$ ;  $p < .001$ ) and employee satisfaction→employee retention ( $\beta = .212$ ;  $p < .001$ ) and demonstrated significant relationships. Further analysis of the isolated direct relationships employee responsiveness→customer satisfaction ( $\beta = .177$ ;  $p < .001$ ) and employee retention→customer satisfaction ( $\beta = .136$ ;  $p < .001$ ) also revealed statistically significant path coefficients in the predicted direction.

Following this, each three-variable relationship was tested respectively for employee responsiveness and employee retention. For the former, the path from employee satisfaction to customer satisfaction lessened in magnitude and became insignificant ( $\beta = .054$ ;  $p = .139$ ) while the employee satisfaction→employee responsiveness ( $\beta = .274$ ;  $p < .001$ ) and employee responsiveness→customer satisfaction ( $\beta = .162$ ;  $p < .001$ ) relationships were essentially unchanged. When employee retention was modeled in the same fashion, the path from employee satisfaction to customer satisfaction once again lessened in magnitude but remained barely significant ( $\beta = .073$ ;  $p = .045$ ); the employee satisfaction→employee retention ( $\beta = .212$ ;  $p < .001$ ) and employee retention→customer satisfaction ( $\beta = .121$ ;  $p < .001$ ) were once again minimally affected. Thus, strong support was found for Hypothesis 6a but Hypothesis 6b receives only minor support. Finally, the possibility for multiple mediation was examined by examining these four variables in tandem; the result of this analysis did not differ from that found through analysis of the whole model as depicted in *Figure 2*. As shown, the relationship between employee satisfaction and customer satisfaction became small and insignificant ( $\beta = .030$ ;  $p = .412$ ) and lends some support to the possibility that multiple mediators may influence the relationship between employee satisfaction and customer satisfaction.

Hypothesis 7 predicted a direct and positive relationship between customer satisfaction and profit per square foot. Evidence of this relationship was found ( $\beta = .240$ ;  $p < .001$ ;  $b = 5.665$ ; S.E. = .830) and therefore Hypothesis 7 was supported.

Finally, Hypothesis 8 examined the potential for the positive relationship between employee satisfaction and financial performance to be mediated by employee responsiveness, employee retention, and customer satisfaction. In order to test this hypothesis, a direct relationship between employee satisfaction and financial performance was first examined. This relationship was not found in either the isolated case ( $\beta = .050$ ;  $p = .166$ ) or in the context of the full model ( $\beta = .027$ ;  $p = .451$ ). Although *Figure 2* specifies significant and positive linkages from employee satisfaction that lead to financial performance through employee responsiveness, employee retention, and customer satisfaction, in a strict sense, mediation is not shown. Thus, while an indirect relationship between employee satisfaction and financial performance is apparent, Hypothesis 8 is not supported.

## CHAPTER 5

### DISCUSSION

The findings reported here have significance theoretically and practically. Theoretically, they contribute to our understanding of the satisfaction-performance relationship by elucidating the nature of linkages between these two constructs. The role of employee satisfaction in the human resources literature is one that is long-lived and, while theoretical rationales explaining why satisfaction may influence firm performance abound, little convincing evidence of a strong connection between these constructs exists. The current study suggests one plausible, and in this case, empirically substantiated possibility, namely that the relationship between these constructs can be “purely” indirect. By examining the influence of employee satisfaction on financial performance in the presence of other theoretically (and organizationally) relevant intervening variables—employee responsiveness, employee retention, and customer satisfaction—a model was created that exhibited remarkably good fit to the data and indicated that the path from satisfaction to performance may be more complex and nuanced than many causal formulations assume.

Additionally, the current work has aspired to further the methodological sophistication with which investigations of employee satisfaction and performance are undertaken. By employing valuable, but under-recognized, analytical techniques to a more complex model of organizational function, subtle, but important relationships were uncovered. In so doing, it is hoped that the current study provides an example that will inform future work within this research vein in particular and within organizational research more broadly. The implications of this work theoretically, practically, and methodologically are addressed first, followed by a discussion of the

study's strengths and limitations. Directions for future research are discussed, where applicable, throughout.

### **Theoretical Implications**

This study makes theoretical contributions to the study of employee satisfaction in several ways. The first key finding of the study was that proximity effects were apparent. This finding holds importance because it suggests at least one explanation for the meager relationships between satisfaction and performance that have been observed in prior work, even at the unit level—satisfaction, as an antecedent, may very well be only distally related to commonly examined organizational outcomes. While, as Dyer's (1984) hierarchy makes clear, this is hardly a new idea, it does suggest that the ceiling on magnitudes of relationships between unit-level satisfaction and various organizational outcomes may be lower than many might expect. Individual-level examinations of satisfaction and performance have generally found correlations in the range of .20-.30. However, this study suggests that at higher levels of analysis, the causal chain from satisfaction to performance may indeed be long. At the individual level, this path is short conceptually and temporally. A given employee is satisfied (or dissatisfied) to a degree, this may or not be mediated by another cognitive or affective construct, and that employee performs some job task. At the unit level, however, this path becomes decidedly more complex, especially when the ultimate criterion is firm- or unit-level financial performance.

Rather, even if satisfied employees, in the aggregate, do actually remain with the company longer and do perform better at their jobs, the impacts of these phenomena still must manifest upon other outcomes before they translate to improved unit or firm performance. Interestingly enough, the magnitude of relationships between satisfaction and financial performance observed in the current study ( $r = .03$

to  $r = .05$ ;  $\beta = .03$  in the full model specification; NS) are not completely out of line with the results found in previous work. Harter, et al. (2001) found the true correlations between job satisfaction/employee engagement and profitability to range from .15 to .17; Koys reported small relationships between satisfaction and profit as a percentage of sales one year later ( $r = .15$ ) and between satisfaction and profit ( $r = .06$ ), neither of which was statistically significant. While these relationships are arguably stronger than those found in the current work, they are also similar in that they are still comparatively weak, at least according to Cohen's (1969) hierarchy. Of further note is the decidedly small figure of  $r = .06$  found in Koys's analysis. Koys employed a longitudinal dataset and found comparatively small relationships—even by the usual standards of this type of research. In this study, longitudinal data were also employed and similar magnitudes were found.

However, the results of this study do stand in some contrast to those arrived at by Ostroff (1992) who proposed and found stronger relationships between satisfaction and performance at the unit level of analysis. At the unit level, the effects of collaboration and employee interaction are argued to be captured and thus, due to performance improvements born of these collaboration effects, satisfaction should exhibit a stronger relationship with performance than at the individual level. Indeed, Ostroff found evidence that such effects did exist and concluded that “they were somewhat stronger than those typically observed at the individual level” (1969). However, certain aspects of Ostroff's study make it unique and are in need of further discussion. Specifically, Ostroff considered the relationships between satisfaction and performance—measures of academic achievement in math, social sciences, and reading—in the context of schools and thus, the outcomes considered are quite different than those typically considered in for-profit organizations. The ultimate criterion in Ostroff's work, academic achievement, differs from the ultimate criterion

in this work, profit per square foot, in terms of its temporal and conceptual proximity to the satisfaction antecedent. Unlike what one might find in a school setting, large for-profit organizations are likely to find this “ultimate criterion” (i.e., profit) causally influenced by a number of factors due to an increased number of stakeholders and a higher degree of organizational complexity among other things.

What this means is that the path from employee satisfaction to profit likely has more steps along the way than the path from teacher satisfaction to student performance. Thus, it is argued here, that Ostroff’s work bears more direct applicability to understanding the relationship between satisfaction and unit performance rather than financial performance and, further, that measures of academic achievement bear more similarity to the current measures of unit performance than they do to profit. Indeed, when the correlations between satisfaction and unit performance (operationalized as employee responsiveness) in the current work ( $r = .27$ ) are compared to those found by Ostroff ( $r = .24$  to  $r = .30$ ), we find similar magnitudes and can reach similar conclusions— namely, that there is some evidence that the collaboration/interaction explanation has some merit, at least for relatively proximal relationships. Given the probable existence of collaboration effects between satisfaction and unit performance, why wouldn’t these effects appear between satisfaction and the more distal outcomes of customer satisfaction and profit? One explanation is that the effects of collaboration are simply “washed out” by causal distance. Given the possibility that certain organizational outcomes are only distally related to employee satisfaction, as the current work suggests, we may not find evidence of such collaboration effects even if they do exist.

Another possible explanation may be found with regard to the characteristics of the sample. Specifically, relationships within the organization considered in the current work may, in fact, differ from those one might find outside of the retail

industry as a whole. Given that sales are most often completed on an individual basis—one salesperson or employee makes a sale to a single customer—opportunities for collaboration for these more distal outcomes may be limited. However, characteristics of the customer are important as well. In general, home improvement retail customers probably have a better idea of what they want when they enter a store and this serves to limit the potential for interaction of employees. For instance, if a given person has intended to purchase plumbing products, he or she likely already has some basic knowledge of the products available and is unlikely to need assistance outside of that which can be provided by an expert employee in the plumbing department. Thus, that customer is most likely to go directly to the plumbing section and consult with the employee there. The result is a rather isolated process compared to what might be found in another setting, retail or otherwise. When one considers that a significant proportion of sales in home improvement retail are made to contractors, who can reasonably be considered “expert customers”, the potential for isolation in the shopping experience is exacerbated. Thus, it is argued that the opportunity for (and the potential effects of) collaborative efforts in the current research setting may be severely limited and therefore, the stronger relationships observed between satisfaction and proximal outcomes of operational performance such as employee responsiveness would not be replicated with customer satisfaction and profit.

To move beyond these informed speculations, however, other work examining satisfaction and multiple organizational outcomes should be undertaken. Specifically, such research would be valuable in a setting in which the interactions of teams or groups of employees are more salient to the realization of valued organizational outcomes. Some possible examples include the medical profession, where nurses, doctors, and any number of other specialized staff must interact with each other regularly to provide patient care; a manufacturing or production setting in which the



ability of a single employee to perform a work task is directly influenced by the satisfactory completion of other work tasks by other employees; and settings in which innovation, as well as the collaborative effort necessary to produce it, is a key to competitive advantage. The results of such could indicate that collaboration effects do have influence on relatively distal outcomes of the satisfaction antecedent and would provide credence to the argument that these effects are “washed out” in the current work.

At a more specific level, such research would be valuable to achieve the following goals: (a) to determine whether the patterns of correlations in the current work are observed in the same magnitudes as those found here and (b) to ascertain whether these patterns, if they do exist, exhibit the same decreases in magnitudes as in the current work. Clearly, goal (a) is important with regard to establishing the generalizability of the current findings. The findings of the current work do appear to line up with some previous work across different settings (i.e., schools and restaurants) and thus, some evidence of generalizability is apparent. However, as is always the case, more work directly examining these relationships at the unit-level is desirable. For instance, if the same general magnitudes are found at different steps in the causal chain, we would have some evidence that the relationships here are relatively constant across industries. However, if smaller or larger correlations are present across the board, some evidence of industry (or associated characteristics) as a moderator of these relationships would emerge. The ultimate product of such research would be a clearer understanding of whether or not we can ever expect large relationships between satisfaction and various indicators of performance. For instance, if the correlations between satisfaction and proximal indicators of performance remain weak across settings, it would appear unwise, if not foolish, to expect large relationships between satisfaction and more distal outcomes.

Goal (b) is related to, but different from, goal (a) in that it is the differences among magnitudes that are at issue as opposed to the magnitudes themselves. This goal is important because it has potential to recognize and, in some respects, quantify, the temporal and conceptual “length” of a causal chain from satisfaction to firm-level financial performance across industries. Specifically, the amount and rate at which correlations decrease across measures is important. Following the full model specification, the correlation of employee satisfaction in Year 1 with employee responsiveness in Year 1 is .27 and the correlation of employee satisfaction in Year 1 with profit per square foot in Year 2 is .05, representing a decrease in magnitude of .22 across the causal chain. If, in another setting, this decrease was observed to be smaller, we would have some initial evidence either that satisfaction was more proximally connected to outcomes in that industry and/or that the “length” of the chain was shorter than in the current work. Likewise, a larger decrease in magnitudes would suggest a comparatively longer or more complex relationship between satisfaction and financial performance. Such knowledge would be theoretically valuable in that it would provide a higher degree of fidelity to our understanding of how and why employee satisfaction does or does not relate to various organizational outcomes at the unit level as well as give some indication of the size of the relationships that can be realistically expected to emerge.

The second major finding of this study was that a “purely indirect” model accurately describes the effects of employee satisfaction on firm financial performance. Although this result largely extends the previously discussed theoretical implications, it is of further theoretical interest for two reasons. First, it stands in contrast to many theories that specify direct relationships between satisfaction and performance and, in so doing, suggests that current models of satisfaction and performance may indeed be too simplistic to accurately model the phenomenon at

hand here. Previous work has either proposed a direct relationship between these constructs or suggested that the relationship is mediated, at best, by one other variable. Even at the unit level, this convention holds as evidenced by Ostroff (1992: 965) who states:

“Employees who are satisfied, committed, and well adjusted will be more willing to work toward organizational objectives and give their services wholeheartedly to the organization, hence promoting organizational effectiveness, than dissatisfied employees, who will be more likely to satisfy minimum expectations of required behavior, perform at less than their potential, and engage in disruptive behaviors that would lower organizational productivity and effectiveness.”

In contrast, the current work proposes and finds evidence that multiple intervening variables may come into play when tracing the path from employee satisfaction to financial performance and that employee satisfaction may indeed exhibit an indirect effect on financial performance even in the absence of a direct relationship to it. (The term “intervening variable” is used here instead of mediator as these variables cannot be properly referred to as mediators since, initially, no significant relationship between satisfaction and performance existed.) This finding is key because it indicates a new layer of complexity is present in what has been primarily considered a rather simple relationship. Further, it suggests that analysis of simple bivariate relationships between satisfaction and various outcomes may be inadequate to accurately describe satisfaction’s true effects. Rather, this model lends support to the notion that satisfaction and firm-level financial performance are separated by a significantly long causal chain and thus, multiple outcomes of satisfaction at multiple levels—i.e., human resources, organizational, and financial—ought to be considered simultaneously.

Another theoretical contribution of this second key finding surrounds the specification of intervening/mediating variables. Previous work considering the potential for mediation between satisfaction and performance has largely been constrained to the individual level and focused on affective and cognitive constructs as mediators. When satisfaction and performance are being considered at higher levels of analysis, however, the salience and value of such mediating/intervening constructs is questionable at best. Thus, the need for identifying intervening constructs at the unit level becomes apparent. This work suggests some examples of tangible unit-level variables that may further clarify the path from satisfaction to financial performance and thus, enrich theory surrounding this relationship. These examples are valuable in that (a) they conceptually correspond to theoretically relevant constructs found in organizational research and (b) they are likely to find counterparts across many different organizations. While the current study demonstrates that organizationally managed and measured outcomes are valuable indicators in specifying the influence of unit-level employee satisfaction in firms, future research would find utility in the identification and direct measurement of other collectively manifested constructs thought to influence this relationship. The importance of this task is increased when one considers that these intervening variables are likely to differ widely between organizations functioning in different sectors of the economy. Thus, identification of the underlying constructs into which these organizational indicators tap is critical to advancing this line of research.

Beyond the evaluation of the model as a whole, specific linkages predicted by extant theory were also considered. By and large, the findings of the study coincided with the relationships predicted by theory and, indeed, form the significant paths visible in *Figure 2*. Employee satisfaction was positively related to employee retention and employee responsiveness; both employee retention and employee responsiveness

shared significant and positive relationships with customer satisfaction; finally, a positive relationship between customer satisfaction and profit per square foot was identified. Notably, while direct relationships between employee satisfaction and immediately proximal variables—employee retention and employee responsiveness—were supported, employee satisfaction’s direct relationship to the more distal outcome of customer satisfaction was not. Interestingly, employee satisfaction in Year 1 and customer satisfaction in Year 2 were significantly and positively correlated ( $r = .10$ ,  $p < .05$ ), suggesting that including multiple outcome variables at different levels of proximity within a single study is important as these variables showed no direct relationship in the full model specification. However, the lack of a direct relationship is hardly out of line with previous findings. Indeed, several researchers have failed to find evidence of the “employee satisfaction-customer satisfaction mirror” (Loveman, 1998; Silvestro & Cross, 2000; Pritchard & Silvestro, 2005). However, one explanation for this finding, beyond that suggested by idiosyncrasies of the sample and causal distance, is that the effects of employee satisfaction on customer satisfaction are expressed through a mediating construct. Indeed, evidence of such a relationship was found in the current study and has received attention from numerous other authors as well with such proposed mediators as service climate (e.g., Schmit & Allscheid, 1995). As mentioned previously, employee responsiveness may have functioned as a proxy of service climate and some evidence of a mediating relationship was found.

Some evidence was also found that employee retention mediated the relationship between employee and customer satisfaction. Although focus on retention as a mediating construct of this relationship is far less prevalent, the relatively strong effect it had as a mediator in the current case does suggest that to the extent a firm is able to keep its employees around, customer satisfaction will improve. This may be the result of the increased stocks of knowledge available to seasoned employees to

perform their jobs well, but such an explanation can only be approached speculatively in this study as no measures of human capital or work knowledge were present. An alternative explanation may be found in the idea that more satisfied workers are simply less likely to quit their jobs and that the positive affective and attitudinal states these employees possess spillover to customers (Bagozzi, 1992; Bowen, et al., 1999). As before, the need for work directly measuring and examining these possibilities would be valuable to the field.

### **Practical Implications**

This study finds strong support for a “purely indirect”, as opposed to mediated (or direct), relationship between employee satisfaction and financial performance. While the distinction between these two conceptualizations is subtle, it is critical, especially when interpreting the importance of employee satisfaction to profit and other measures of bottom-line organizational performance. More specifically, as Holmbeck (1997: 603) notes, a mediated relationship implies a significant association between predictor and criterion variables. In contrast, an indirect relationship requires a more conservative interpretation of links between variables. So what does this actually mean? Support of such a model suggests that improvements in employee satisfaction cannot reliably be expected to translate to significant improvements in firm-level financial performance in stark contrast to the story being told by many consulting firms as well as the popular press.

Somewhat paradoxically, however, there is a silver lining to the cloud of skepticism this finding casts over the idea that employee satisfaction can affect positive changes in firm performance. While this study failed to find evidence of a relationship between these variables, the proposed model still accounts for roughly six percent of the variance in profit per square foot. While, from a research standpoint,

this leaves an immense amount of room for improvement, a practical interpretation sheds a different light.

The average store in the current sample made about \$3.9 million in profit in Year 2 (\$34.49 per square foot). A six percent swing, thus, translates to about \$234,000 for the average store; given the sample size of 782 stores, this figure escalates, almost astronomically, to nearly \$183 million. An even more conservative estimate based on the standardized indirect effect of employee satisfaction alone on profit—which was arguably miniscule at .024—still equates to \$73 million when all stores in the sample are considered. The point here is not to suggest that any specific dollar amount or effect size is important. Rather, such figures merely illustrate that even though the demonstrated relationships may be considered minute, when it comes to the actual operation of the company in question, they are potentially anything but. However, there is no guarantee that these small relationships will have such an effect—that is, the potential for large practical effects does not ensure their realization.

Beyond this, the current work also has significant implications for managers. Specifically, the nature of the supported model suggests managerial attention is best focused on improving performance on proximal antecedents to desired outcomes rather than their more distal counterparts. More simply, this translates to selecting those interventions which are most likely to have a direct and measurable effect on the desired outcome or outcomes and thus, maximizing the organization's return on investment. The value of such advice is demonstrated clearly in the current work. Assume a fictional manager wishes to improve store-level profit in the current sample and is faced with two decisions. He or she can work to improve either employee satisfaction or customer satisfaction. As stated previously, the indirect standardized effect of employee satisfaction on profit per square foot is .024; coincidentally, the impact of customer satisfaction on the same outcome is ten times as large ( $\beta = .24$ ).

Thus, with the assumption of anything but infinite organizational resources, it becomes abundantly clear which intervention is more valuable to the organization when the criterion for success is improved financial performance. While this example is intended only to be illustrative, it does make clear that the ability of a given managerial or organizational intervention to improve some desired outcome should be rationally and skeptically approached, as well as compared to competing interventions of arguably higher value to the organization.

The final practical implication of this study surrounds the measurement and analysis of organizationally relevant variables. While care was taken to identify variables that correspond to theoretically substantiated constructs in the current work, the truth remains that the data employed in this investigation were attained entirely from company records. Thus, if nuanced and complex relationships can be ascertained from this set of data from this firm, it appears plausible that other sets of data containing measures of organizationally relevant variables from other firms hold the same possibility. Following this, one final recommendation is that managers, and the organizations that employ them, take a closer look at the wealth of information they already have at their fingertips with the consideration in mind that things are not always as simple as they appear. The preceding analyses, while not simple, are certainly within the means of today's organizations to accomplish and, if they are not, almost assuredly represent one of the most justified expenditures on consulting costs that a given firm is likely to come across. Such analyses will aid organizations in identifying the most appropriate and, by extension, most valuable alternatives in a veritable sea of potential courses of action.



## **Methodological Implications**

A secondary goal of this work was to further the methodological rigor with which investigations of the satisfaction-performance relationship are approached. To be sure, more recent investigations have made significant steps in the right direction owed both to the ingenuity of the researchers examining these constructs and developments in analytical techniques. Nonetheless, several aspects of this study represent advances in analysis that, although hardly novel outside of the field, deserve attention within it.

First, the use of control variables within structural analyses in the human resources literature, and within the social sciences in general, is relatively rare. While investigations involving other analytical techniques commonly employ control variables, those that opt to use SEM often do not. This is disheartening, especially given the significant impact such variables can have on observed relationships between constructs of interest within the realm of social sciences. While such factors can be modeled explicitly, this becomes difficult (a) when the set of control variables is relatively expansive and (b) when such controls are dichotomous in nature; this study's set of controls meets both of these criteria. The current work offers a method by which such variables can be included in SEM analyses and, more importantly, demonstrates that adequate model fit can be obtained without sacrificing fidelity with regard to the numerous "outside" influences that may affect organizational function. Thus, the hope is that theory rather than methodology will direct the selection of variables included in future SEM-based investigations in the human resources literature.

Another methodological distinction this work presents regards the use of covariance matrices rather than correlation matrices in examining models under the SEM framework. SEM is based on covariance methods and the use of correlation

matrices in their place can distort standard errors, significance tests, and thus, the results and conclusions at which researchers ultimately arrive. Luckily, as this study has demonstrated, the transformation of correlations into covariances is simple and can be done easily with some standard statistical packages or, as an alternative, by a computer spreadsheet. As a post hoc analysis, relationships were examined using both correlations and covariances with identical data. When the former were employed, inaccurate standard errors were apparent (i.e., all standard errors for path coefficients were computed to be the same). While the significance of the paths themselves as well as the point estimates remained stable, model fit did decrease when the correlation matrix was utilized—minor decreases in fit were exhibited in the NFI, CFI, and RMSEA—while the resulting Bollen-Stine p-value indicated that the model should be rejected. Thus, it becomes clear that if such inaccuracies are permitted to influence analyses, the robustness of the results and the conclusions made from them could be questionable at best and, at worst, simply wrong.

Additionally, this study employed the Bollen-Stine bootstrap to compensate for the effects of multivariate non-normality in the data. Like many statistical techniques, SEM is designed for the analysis of normal data and deviations from the assumption of normality can detrimentally affect the defensibility of the conclusions one may reach. In the current case, examinations of individual indicators showed normality. However, when all variables included in the dataset were considered simultaneously, the potential for a significant influence from multivariate non-normality became apparent. Because the function of organizations is inherently complex and multiple variables should be considered simultaneously whenever possible, such considerations should be acknowledged and examined in future work. Although this is less of a concern in past work, those SEM-based research designs that include multiple organizational outcomes considered simultaneously would be well advised to examine

the potential for such influences to affect the robustness of analytical procedures utilized.

Finally, while some have recognized that individual-level examinations of employee satisfaction and performance may be subject to measurement problems surrounding restriction of range and narrowly defined measures of performance (e.g., Organ, 1977) the results of this study suggest that firm-level investigations of these constructs are not free from measurement problems despite their ability to capture collaboration effects. Rather, broad measures of firm performance, while able to capture many influences ignored by individual-level performance measures, likely present a double-edged sword. Specifically, researchers may pay the price of contamination for their selection of such measures as they necessarily adopt the respective influences of a myriad of other, unrelated, factors that can affect bottom-line financial performance. Nonetheless, some evidence that contamination of measures was not fully responsible for the observed patterns of correlations was found. While this study cannot begin to quantify the respective influences of contamination and proximity, the results do suggest that the relationships one observes when examining satisfaction and performance may be highly dependent upon the operationalizations of performance one chooses. Thus, given the potential for variability in observed magnitudes due to contamination/deficiency and proximity of measures, researchers would be well advised to employ multiple performance measures within a single study. However, as the most recent meta-analysis of satisfaction-performance studies (Judge, et al., 2001) indicates, such studies are the exception rather than the rule. With luck, these results will begin to convince researchers and practitioners alike that no “perfect” measure of performance exists and, further, that multiple operationalizations of performance from different sources

are necessary to elucidate the true nature of the relationship between satisfaction and performance.

### **Strengths and Limitations**

The current work has a number of strengths. First, it employed a longitudinal data set in which antecedents were temporally separated from criterion variables. While such a characteristic does not give a guarantee of a causal relationship, it does represent a significant advance from the concurrent designs that have characterized much of the work on satisfaction and performance to this point. A second strength of the current work lies in its utilization of multiple measures of employee and organizational performance from multiple sources. Although all data were recorded by the company, sources of the data included employees and customers themselves as well as objective measures. Further, measures at varying levels of organizational outcomes were employed. Combined, these characteristics set the data apart in terms of limiting the possible influences of common methods variance and allowing a more fully realistic investigation of the phenomena under consideration. A third strength of the current work is its focus on satisfaction and performance at the unit level. While the body of work on this relationship at higher levels of analysis is growing, it is still decidedly small. Thus, the work adds much needed attention to an important segment of the human resources literature. Finally, this study finds strength in a robust methodology and, in so doing, provides an example of how this methodology may be applied to future research questions.

To be sure, there are also several limitations to this work. First, the study examined satisfaction and performance within the context of a single, large firm in the home improvement retailing industry. As discussed previously, characteristics of this industry may be unique within the set of all industries and further, home improvement

retail may be unique among retail settings. Thus, the generalizability of results to other types of firms or other types of retail firms may be limited. While there is some evidence that the results found here are comparable to those found by other researchers in different contexts, this evidence is hardly definitive. A second limitation of this work surrounds the lack of individual-level data available. While this poses no problem for virtually all of the other measures in the study, it does call into question the viability of aggregating measures of employee satisfaction to the store level. As previously discussed, Harter, et al. (2002) found high reliability for the measure employed in the current work (Cronbach's alpha of .91) in their meta-analysis of over four thousand business units. Nonetheless, the inability to determine the reliabilities of this measure for the sample at hand is a limitation.

Third, the current work may be limited by potential model misspecification. While the model at hand is theoretically founded and includes a number of relevant variables, the possibility that an important variable or variables have been omitted is apparent. Such omission can lead to inaccuracy of results although, given the surprisingly good fit of the model to the data, this seems unlikely. Nevertheless, constructs such as employee commitment, organizational citizenship, or organizational climate may have a significant role in determining the effect of satisfaction within a firm. A fourth limitation of the current work lies in its inability to prove causation, a limitation that necessarily follows any analysis. In spite of the use of SEM to perform a path analysis, it must be remembered that such techniques, despite any causal inferences we may attach to them, are based on analysis of the correlations between variables and thus, cannot prove causation. Fifth and finally, the model formulated in this study explained only six percent of the variance in profit per square foot at the store level despite fitting the data well. While good model fit is always desirable, it must be remembered that the only thing a model fit statistic actually indicates is the

degree to which a covariance matrix associated with the theoretically specified model matches the covariance matrix found in the data itself. Thus, one can end up in the current situation in which, model fit is excellent but the amount of variance this “excellent” model explains leaves much to be desired. The end result is the conclusion that the current work still falls well short of explaining completely the determinants of firm profitability.

## **Conclusion**

In their qualitative review, Brayfield & Crockett (1955) recognized the work of Houser (1927) as a pioneer of the study of employee attitudes. However, after eighty-two years of attention, the role of employee satisfaction within organizations is one about which we know some things but about which we need to learn many more. This study has attempted to further this development by showing that proximity and contamination can influence the magnitude of observed relationships between employee satisfaction and various performance outcomes and that a “purely indirect” model, based on theoretically predicted linkages, accurately describes the influence of employee satisfaction on financial performance. Beyond these specific findings, however, this study has demonstrated that the relationships between employee satisfaction and other outcomes within organizations are more subtle, intricate, and complex than many treatments of the subject have assumed and that these nuanced relationships can be uncovered with sophisticated, but accessible, analytical techniques. It is the hope of this researcher that the results presented here inspire thought about new theories of satisfaction and performance as well as new designs and techniques to test them.

## APPENDIX

*Descriptive Statistics and Bivariate Correlations*

	N	M	SD	1	2	3	4	5	6	7
1 Employee Satisfaction Year 1	782	3.529	0.258							
2 Employee Satisfaction Year 2	782	3.609	0.271	.440**						
3 Retention	782	72.024	7.285	.160**	0.058					
4 Employee Responsiveness Year 1	782	0.000	1.000	.262**	.188**	0.046				
5 Employee Responsiveness Year 2	782	0.000	1.000	.192**	.303**	0.026	.600**			
6 Customer Satisfaction Year 1	782	0.000	1.000	.120**	.075*	.132**	.097**	.071*		
7 Customer Satisfaction Year 2	782	0.000	1.000	.138**	.162**	.135**	.177**	.231**	.343**	
8 Profit per Square Foot Year 1	782	30.544	20.475	0.024	-0.023	.096**	-.179**	-.161**	.156**	.086*
9 Profit per Square Foot Year 2	782	34.491	23.639	0.029	-0.029	.092**	-.173**	-.200**	.169**	.078*
10 Age	782	491.941	557.531	0.049	0.047	.190**	-.119**	-.095**	.095**	.108**
11 Number of Employees	782	122.628	24.512	0.044	-.078*	-.073*	-.239**	-.264**	-0.024	-.077*
12 Transactions per Square Foot	782	5.346	1.361	-0.013	-0.044	0.048	-.210**	-.226**	-0.018	-.074*
13 DC1	782	0.128	0.334	.136**	.208**	-.084*	.237**	.385**	0.016	0.038
14 DC2	782	0.119	0.324	0.012	.076*	0.019	-0.039	-0.003	.085*	.204**
15 DC3	782	0.073	0.260	-.077*	-.123**	-0.007	-0.065	-.145**	-0.009	0.001
16 DC4	782	0.084	0.278	.169**	.121**	-0.015	0.02	0.038	.106**	.199**
17 DC5	782	0.079	0.270	-.097**	-.105**	-0.029	0.04	0.004	-.205**	-.181**
18 DC6	782	0.060	0.238	0.04	-0.029	-.120**	-0.062	-.120**	-.129**	-.144**
19 DC7	782	0.115	0.319	-.115**	-0.007	.076*	-0.027	-0.036	-0.049	-0.025
20 DC8	782	0.116	0.321	-0.026	-.081*	0.032	.124**	0.045	0.013	-0.055
21 DC9	782	0.077	0.266	0.024	-.095**	-.092*	-.113**	-.126**	.126**	-0.031
22 DC10	782	0.109	0.311	-0.032	-0.012	.161**	-.192**	-.172**	0.038	-0.064
23 DC11	782	0.040	0.195	-0.058	-0.019	0.02	0.039	0.056	-0.04	0.014

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

## Descriptive Statistics and Bivariate Correlations

	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
.928**															
.425**	.379**														
.608**	.600**	.158**													
.793**	.843**	.296**	.621**												
-.132**	-.221**	-.103**	-.271**	-.176**											
.092**	.096**	.393**	.081*	.078*	-.141**										
.181**	.155**	-0.038	.150**	.143**	-.107**	-.103**									
-0.058	-0.065	-0.011	-0.037	-.115**	-.116**	-.112**	-.085*								
-.278**	-.220**	-.135**	-0.069	-.106**	-.112**	-.108**	-.082*	-.089*							
-0.068	-0.024	-.166**	.265**	0.065	-.097**	-.093**	-.071*	-.077*	-.074*						
-.101**	-.153**	-.125**	-.135**	-.164**	-.138**	-.132**	-.101**	-.109**	-.106**	-.091*					
0.019	0.014	-0.044	-.100**	-0.054	-.139**	-.133**	-.102**	-.110**	-.106**	-.092*	-.131**				
.128**	.230**	-0.054	.112**	.191**	-.110**	-.106**	-.081*	-.088*	-.085*	-.073*	-.104**	-.105**			
.201**	.216**	.285**	0.027	.183**	-.134**	-.128**	-.098**	-.106**	-.102**	-.088*	-.126**	-.127**	-.101**		
0.021	0.008	-.124**	.147**	0.018	-.078*	-.075*	-0.057	-0.062	-0.06	-0.051	-.073*	-.074*	-0.059	-.071*	

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).



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